

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

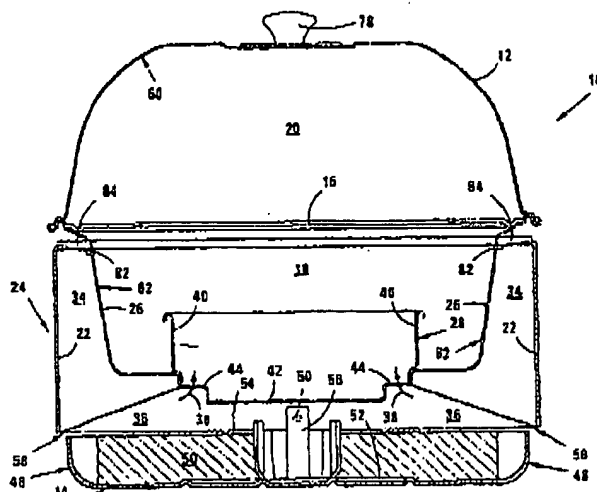
(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
5 April 2001 (05.04.2001)

PCT

(10) International Publication Number
WO 01/22854 A1

- (51) International Patent Classification: A47J 37/07 (74) Agent: VIVIER, Gurth; Adams & Adams, PO Box 1014, 1140 Prospect Street, Hatfield, 0001 Pretoria (ZA).
- (21) International Application Number: PCT/IB00/01384.
- (22) International Filing Date:
28 September 2000 (28.09.2000)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
99/6164 28 September 1999 (28.09.1999) ZA
99/7827 22 December 1999 (22.12.1999) ZA
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- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- Published:
— With international search report.
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: COOKING APPARATUS



(57) Abstract: Cooking apparatus (10) is provided which includes a base (14) and a closure member (12). The base includes insulating material (34) which at least partially defines a combustion chamber (18) for holding a combustible material for providing heat in use. The closure member (12) is arranged to be seated on the base (14) and at least partially defines a cooking chamber (20) heated by the combustible material. The base typically includes an upper section (24) and a lower section (48) with an air inlet (58) defined between the sections to allow air flow into the combustion chamber (18). The apparatus (10) includes a body portion which includes an elongate air inlet (58) for feeding air to the combustion chamber in use, the inlet being defined between the upper (24) and lower (48) sections.

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COOKING APPARATUS

THIS INVENTION relates to cooking apparatus. It also relates to a base for cooking apparatus.

Various different types of outdoor cooking apparatus including a base and a dome are well known. The base and the dome define a hemispherical body including a cooking chamber in which a combustible material, e.g. charcoal briquettes or the like, provide heat to cook food in a barbecue fashion. A typical example of such apparatus is a WeberTM kettle barbecue which has a metal base and dome. In use, the metal of the dome and base heats up resulting in reduced efficiency and hindering portability of the apparatus in use. For the purposes of this specification apparatus in the form of a so-called "kettle barbecue" should be predominantly, but not exclusively, borne in mind.

According to the invention, there is provided cooking apparatus which includes

a base including insulating material which at least partially defines a combustion chamber for holding a combustible material for providing heat in use; and

a closure member arranged to be seated on the base, the closure member at least partially defining a cooking chamber heated by the combustible material.

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Typically, the base includes an upper section and a lower section with an air inlet defined between the sections to allow air flow into the combustion chamber.

Further in accordance with the invention, there is provided
5 cooking apparatus which includes a body portion including

a base including an upper section and a lower section, the upper section defining a combustion chamber for holding a combustible material for providing heat in use, and the lower section being attached to the upper section;

10 an elongate air inlet for feeding air to the combustion chamber in use, the inlet being defined between the upper and lower sections; and

a closure member arranged to be seated on the base, the closure member at least partially defining a cooking chamber heated by the combustible material.

15 Still further in accordance with the invention, there is provided cooking apparatus which includes a body portion including

a base which defines a combustion chamber for holding a combustible material for providing heat in use; and

20 a closure member arranged to be seated on the base, the closure member at least partially defining a cooking chamber heated by the combustible material and including an inner surface which enhances reflection of heat.

The reflective surface is typically defined by a natural inner metal surface of the closure member and, accordingly, the inner surface

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of the closure member is preferably not painted or provided with a finish which reduces reflection of heat.

5 The base typically includes insulating material which at least partially defines the combustion chamber for holding the combustible material to provide heat in use. The combustion chamber may include holding means for holding the combustible material. Typically, the holding means is in the form of a metal dish which is seated in a bottom opening of the insulating material. The dish may be circular in outline and include a lower circular ring section in which a plurality of apertures
10 are defined. In use, the air from the air inlet passes through the apertures to allow combustion of the combustible material.

The base typically includes a frame within which the insulating material is mounted and which forms part of the upper section. Preferably, the frame is a hollow circular cylindrical frame and,
15 accordingly, the lower section may be circular in lateral section and attached to an operatively lower end of the frame. The air inlet port may thus be circular in outline.

The lower section may be shaped and dimensioned so as at least partially to define an air reservoir below the combustion chamber.
20 Typically, the lower section of the base includes a lower frame, e.g. a pressed metal frame, and insulating material for insulating the lower section from heat radiating from the holding means. The air reservoir may be defined between the insulating material in the lower and upper sections and the holding means. In a preferred embodiment, the lower
25 section includes a glass fibre mat provided on an upper surface of the

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insulating material in the lower section. Accordingly, the combustion chamber may be a generally insulated chamber with an open upper end from which heat radiates into the cooking chamber.

5 The upper section of the base may include a heat reflective insert which defines a seat in which the holding means is seated and which also defines a wall of the combustion chamber. The insulating material may be shaped and dimensioned to receive the reflective insert and insulate the reflective insert from the frame. The reflective insert is typically pressed and its upper rim defines a seat for the closure member.
10 The closure member is typically in the form of a dome, e.g. a pressed anodised aluminium dome which is about 1 mm thick, and which includes a plurality of ventilation apertures and a handle. In certain embodiments, the dome is metallic powder coated on its exterior.

15 The insulating material is typically glass fibre wool, ceramic wool, a perlite ceramic mix, a vermiculite cement mix, or the like.

The cooking apparatus may include a metal grille or grid which is located in use between the combustion chamber and the cooking chamber. Typically, the grille is in the form of a stainless steel disc which is circular in outline and includes a substantial number of
20 apertures or bores. The grille is dimensioned so that it may be seated on the reflective insert and the bores are arranged in rings or groups at increasing radii. In certain embodiments, a plurality of grooves, typically three grooves arranged in a star, are provided. Advantageously, the bores have a diameter of about 5 mm thereby to inhibit any flame arising
25 in the combustion chamber from entering the cooking chamber.

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The invention extends to a base for cooking apparatus as hereinbefore described.

The invention is now described, by way of example, with reference to the accompanying diagrammatic drawings.

5 In the drawings,

Figure 1 shows a cross-sectional view of cooking apparatus in accordance with the invention;

Figure 2 shows a cross-sectional view of components of a base of the apparatus of Figure 1;

10 Figure 3 shows a cross-sectional view of a closure member of the apparatus of Figure 1;

Figure 4 shows a top plan view of holding means for holding a combustible material in a combustion chamber of the apparatus;

15 Figure 5 shows a cross-sectional view of the holding means taken at V-V in Figure 4;

Figure 6 shows a top plan view of a grille or platform of the apparatus of Figure 1;

Figure 7 shows a cross-sectional view of the grille taken at VII-VII in Figure 6 with certain detail omitted for the sake of clarity;

20 Figure 8 shows a three-dimensional view from the top of a frame of the base of the apparatus; and

Figure 9 shows a three-dimensional view from the bottom of the frame of Figure 8.

25 Referring to the drawings, reference numeral 10 generally indicates cooking apparatus in accordance with the invention. The

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apparatus 10 is in the form of a so-called "kettle barbecue" and is typically used in an outdoor environment to cook food. The apparatus 10 includes a dome-shaped closure member or lid 12, a base 14, and a grille 16 which separates a combustion chamber 18 and a cooking chamber 20. As described in more detail below, a combustible material, typically charcoal briquettes or the like, is located in the base 14 to provide heat which rises into the cooking chamber 20 thereby to cook food located on the grille 16.

The base 14 includes an outer sleeve or frame 22 (see Figures 1, 7 and 8) which is typically of an ABS plastics material of about 2.5 mm in thickness. The frame 22 is hollow circular cylindrical and forms part of an upper section 24 of the base 14. It is however to be appreciated that the base may be of any shape. The base 14 further includes a heat reflective insert 26 (see Figures 1 and 2) which is generally cylindrical in outline with a tapering diameter and provides a seat in which holding means in the form of a dish 28 (see Figures 1, 2, 4 and 5) is seated. The dish 28 is typically of stainless steel with a diameter 30 (see Figure 2) of about 170 mm and a depth 32 of about 35 mm.

In order to enhance heat retention within the combustion chamber 18 and inhibit heating of the frame 22, insulating material 34 is provided. The insulating material 34 is typically glass fibre wool, ceramic wool, a perlite cement mix, vermiculite cement mix, or the like and, in top plan view, is generally cylindrical in shape and defines a seat for the insert 26. The insulating material 34 is shaped and dimensioned so as to define an air reservoir 36 from which air may be drawn into the

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combustion chamber 18 as generally indicated by arrows 38. Accordingly, the dish 28 includes side walls 40 integrally formed with a bottom or base 42 via a circular ring 44 (see Figure 4) with circumferentially spaced bores or apertures 46 (only a few of which are
5 referenced in the drawings for clarity) to allow air flow as indicated by arrows 38.

The base 14 further includes a lower section 48 which is typically pressed from aluminium and of a slightly lesser diameter than the upper section 24. The lower section 48 includes a circular disc 50
10 of insulating material to insulate its lower frame 52 from heat radiated from the dish 28. Further, the lower section 48 includes a glass fibre film 54 to enhance the insulation. In other embodiments, the base 14 is of ABS plastics material.

The lower section 48 includes three equally angularly
15 spaced mounting brackets 56 (only one of which is shown in Figure 1) for mounting the lower section 48 to the upper section 24. The lower section 48 is mounted to the upper section 24 in such a fashion so as to define an air inlet 58 which allows air to be drawn into the combustion chamber 18 via the air reservoir 36 and through the bores 46. The air
20 inlet 58 is in the form of a ring which extends about the upper and lower sections 24, 48 to allow a more uniform intake of air. As the air inlet 58 is elongate in nature and extends in the form of a ring it is believed that the effect of ambient wind on combustion in the combustion chamber 18 is at least partially reduced. Each mounting bracket 56 is pop-riveted
25 (not shown) to the frame 22 through apertures 58 (see Figures 1, 8 and 9).

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5 The closure member or lid 12 is pressed from aluminium and has a natural internal reflective surface 60 (see Figures 1 and 3) which enhances the reflection of heat towards food located on the grille 16. Accordingly, the internal reflective surface 60 is not painted black or a dark colour which retards reflection. However, in certain embodiments, the lid 12 may include a coating which enhances reflection. Likewise, the insert 26 has a reflective surface 62 to enhance the reflection of heat towards the grille 16 and thus towards the cooking chamber 20.

10 Referring in particular to Figures 6 and 7 of the drawings, the grille 16 is disclike in shape and of stainless steel which is about 1 to about 1.5 mm thick. In a further embodiment, the grille 16 has three pressed feet which are spaced circumferentially equidistant. In use, the feet are seated on the insert 26. It is believed that in the event of the grille 16 buckling or warping due to heat, the grille 16 may rest in a
15 stable fashion on the insert 26 by means of the feet.

The grille 16 has a diameter 64 of about 290 mm and a circumferential groove 66 with a diameter 68 of about 275 mm. Further, the grille 16 has a solid central portion 70 about which a substantial number of holes or bores 72 are formed. The bores 72 are arranged in
20 an equally spaced fashion on circles of increasing radii. The bores 72 have a diameter of about 5 mm so that any flame occurring in the combustion chamber 18 is inhibited from entering the cooking chamber 20. A circle of bores 74 having a larger diameter is provided about a periphery of the grille 16. The grille 16 has recesses or grooves 76
25 which extend outwardly from the central portion 70 in a starlike fashion. In use, the bores 74 provide increased ventilation between the

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combustion chamber 18 and the cooking chamber 20 and the grooves 76 enhance the rigidity of the grille 16.

5 The closure member or lid 12 includes a handle 78 to facilitate removal thereof from the base 14. The lid 12 is typically anodized aluminium of about 1 mm in thickness and three ventilation holes (not shown) are provided about the handle 78. In other
10 embodiments, the exterior of the lid 12 is metallic powder coated. The ventilation holes are typically about 15 mm in diameter and the handle 78 is typically of a suitable plastics material capable of withstanding high temperatures. As mentioned above, the lid 12 has an internal reflective surface 60 to reflect heat towards the grille 16. A lower peripheral edge 80 includes an upturned lip to facilitate seating of the lid 12 on the reflective insert 26 (see Figure 1).

15 In order to retain the insert 26 in its seated position within the insulating material 34, pop-rivets 82 are provided (see Figure 1). In particular, the base 14 includes a plastics ring 84 which is siliconed to the frame 22 and checks removal of the insert 26 as a result of the pop-rivets 82. In other embodiments, the pop-rivets 82 are omitted and the
20 insert is retained in its seated position by means of a high temperature silicone adhesive.

It is believed that the invention, as illustrated, provides an enhanced cooking apparatus 10 for barbecuing. In particular, the insulating material 34 reduces the amount of heat lost from the combustion chamber 18 to the frame 22 thereby increasing the quantum
25 of heat fed through to the cooking chamber 20. Further, as the frame

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22 is insulated from the combustion chamber 18, it remains relatively cool during the cooking operation and, accordingly, the cooking apparatus 10 may be lifted or transported by user with relative ease.

5 It is further believed that the grille 16 which separates the cooking chamber 20 from the combustion chamber 18 enhances the operating characteristics of the apparatus 10. In particular, the bores 72 inhibit any flames which may be generated in the combustion chamber 18 from entering the cooking chamber 20 and, accordingly, the likelihood of the food being burnt by the flames is therefore reduced. Further, as
10 the inlet 58 extends about the periphery of the base 14, it is believed that the flow of air into the cooking chamber 18 is less sensitive to ambient wind than in the case where a few large apertures in the base are provided as in conventional barbecue cooking apparatus. In addition, the internal reflective surface 60 of the lid 12 enhances cooking as heat
15 is reflected towards food placed on the grille 16.

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CLAIMS:

1. Cooking apparatus which includes a base including insulating material which at least partially defines a combustion chamber for holding a combustible material for providing heat in use; and
5 a closure member arranged to be seated on the base, the closure member at least partially defining a cooking chamber heated by the combustible material.
2. Cooking apparatus as claimed in Claim 1, in which the base includes an upper section and a lower section with an air inlet defined
10 between the sections to allow air flow into the combustion chamber.
3. Cooking apparatus which includes a body portion including a base including an upper section and a lower section, the upper section defining a combustion chamber for holding a combustible material for providing heat in use, and the lower section being attached
15 to the upper section;
an elongate air inlet for feeding air to the combustion chamber in use, the inlet being defined between the upper and lower sections; and
a closure member arranged to be seated on the base, the closure member at least partially defining a cooking chamber heated by the
20 combustible material.
4. Cooking apparatus which includes a body portion including a base which defines a combustion chamber for holding a combustible material for providing heat in use; and
a closure member arranged to be seated on the base, the closure
25 member at least partially defining a cooking chamber heated by the

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combustible material and including an inner reflective surface which enhances reflection of heat.

5. Cooking apparatus as claimed in Claim 4, in which the reflective surface is defined by a natural inner metal surface of the closure member.

6. Cooking apparatus as claimed in Claim 5, in which the base includes insulating material which at least partially defines the combustion chamber for holding the combustible material.

7. Cooking apparatus as claimed in Claim 6, in which the combustion chamber includes holding means for holding the combustible material.

8. Cooking apparatus as claimed in Claim 7, in which the holding means is in the form of a metal dish which is seated in a bottom opening of the insulating material.

9. Cooking apparatus as claimed in Claim 8, in which the dish is circular in outline and includes a lower circular ring section in which a plurality of apertures are defined.

10. Cooking apparatus as claimed in Claim 9, in which the base includes a frame within which insulating material is mounted and which forms part of an upper section.

11. Cooking apparatus as claimed in Claim 10, in which the frame is a hollow circular cylindrical frame and the lower section is

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circular in lateral section and attached to an operatively lower end of the frame.

12. Cooking apparatus as claimed in Claim 11, in which the lower section is shaped and dimensioned so as at least partially to define an air reservoir below the combustion chamber.

13. Cooking apparatus as claimed in Claim 12, in which the lower section of the base includes a lower frame and insulating material for insulating the lower section from heat radiating from the holding means.

14. Cooking apparatus as claimed in Claim 13, in which an air reservoir is defined between the insulating material in the lower and upper sections and the holding means.

15. Cooking apparatus as claimed in Claim 14, in which the lower section includes a glass fibre mat provided on an upper surface of the insulating material in the lower section.

16. Cooking apparatus as claimed in Claim 15, in which the upper section of the base includes a heat reflective insert which defines a seat in which the holding means is seated and which also defines a wall of the combustion chamber.

17. Cooking apparatus as claimed in Claim 16, in which the insulating material is shaped and dimensioned to receive the reflective insert and insulate the reflective insert from the frame. I. Cooking apparatus as claimed in Claim 17, in which the closure member is in the

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form of a dome and includes a plurality of ventilation apertures and a handle.

18. Cooking apparatus as claimed in Claim 18, which includes a metal grille or grid which is located in use between the combustion
5 chamber and the cooking chamber.

19. Cooking apparatus as claimed in Claim 19, in which the grille is in the form of a stainless steel disc which is circular in outline and includes a substantial number of apertures or bores.

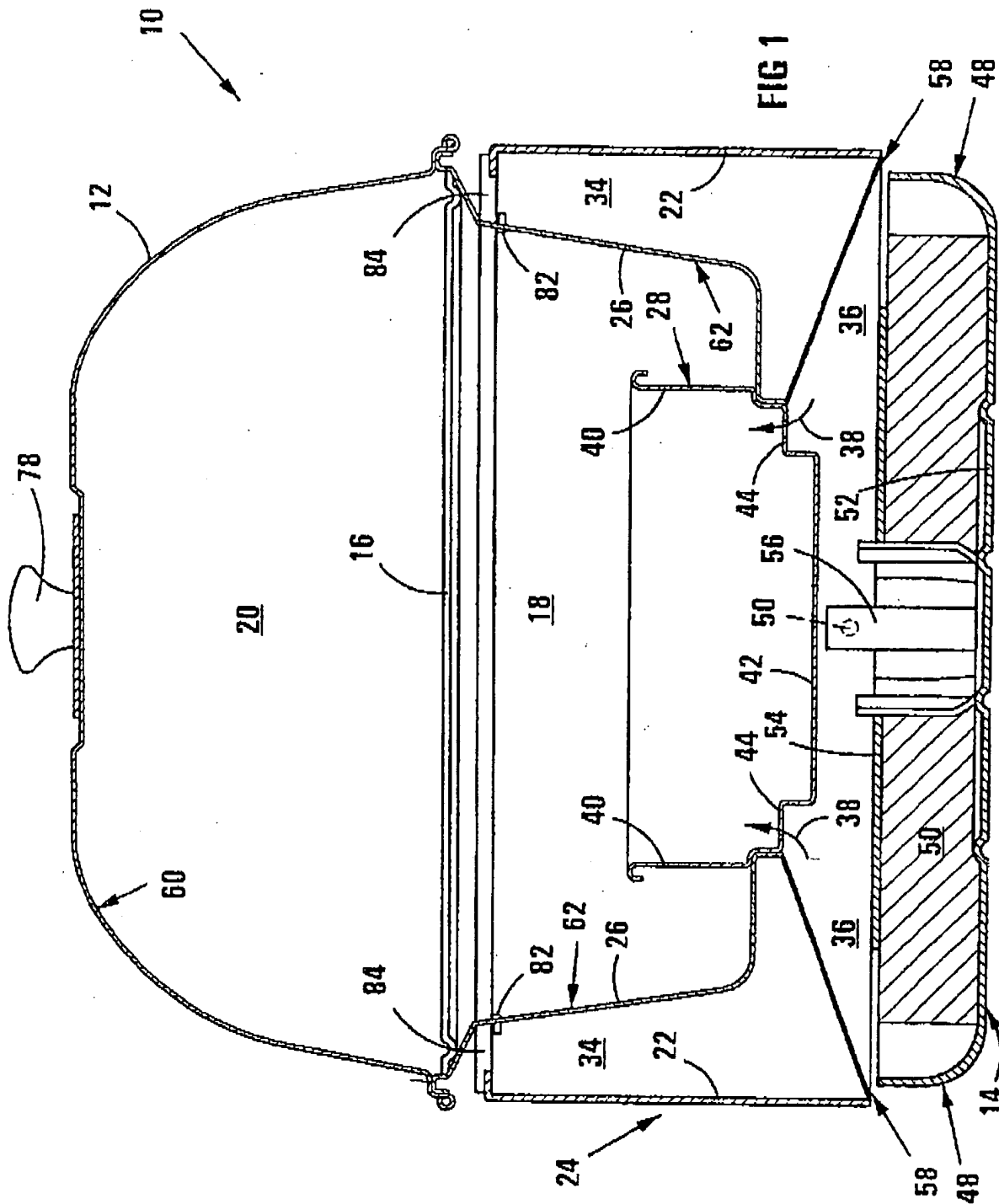
20. Cooking apparatus as claimed in Claim 20, in which the grille is dimensioned so that it may be seated on the reflective insert and the bores are arranged in rings or groups at increasing radii.
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21. A new cooking apparatus substantially as herein described and illustrated.

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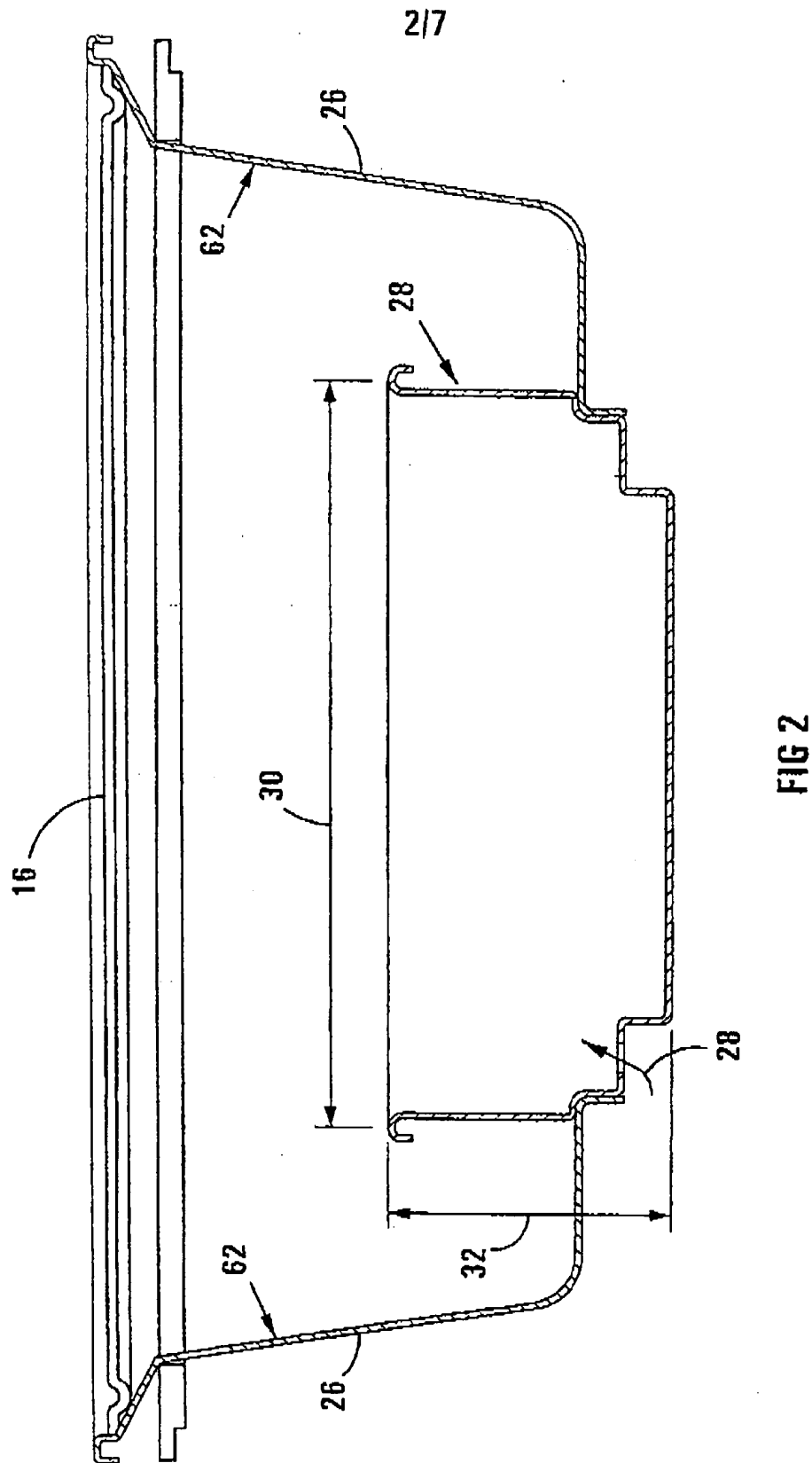
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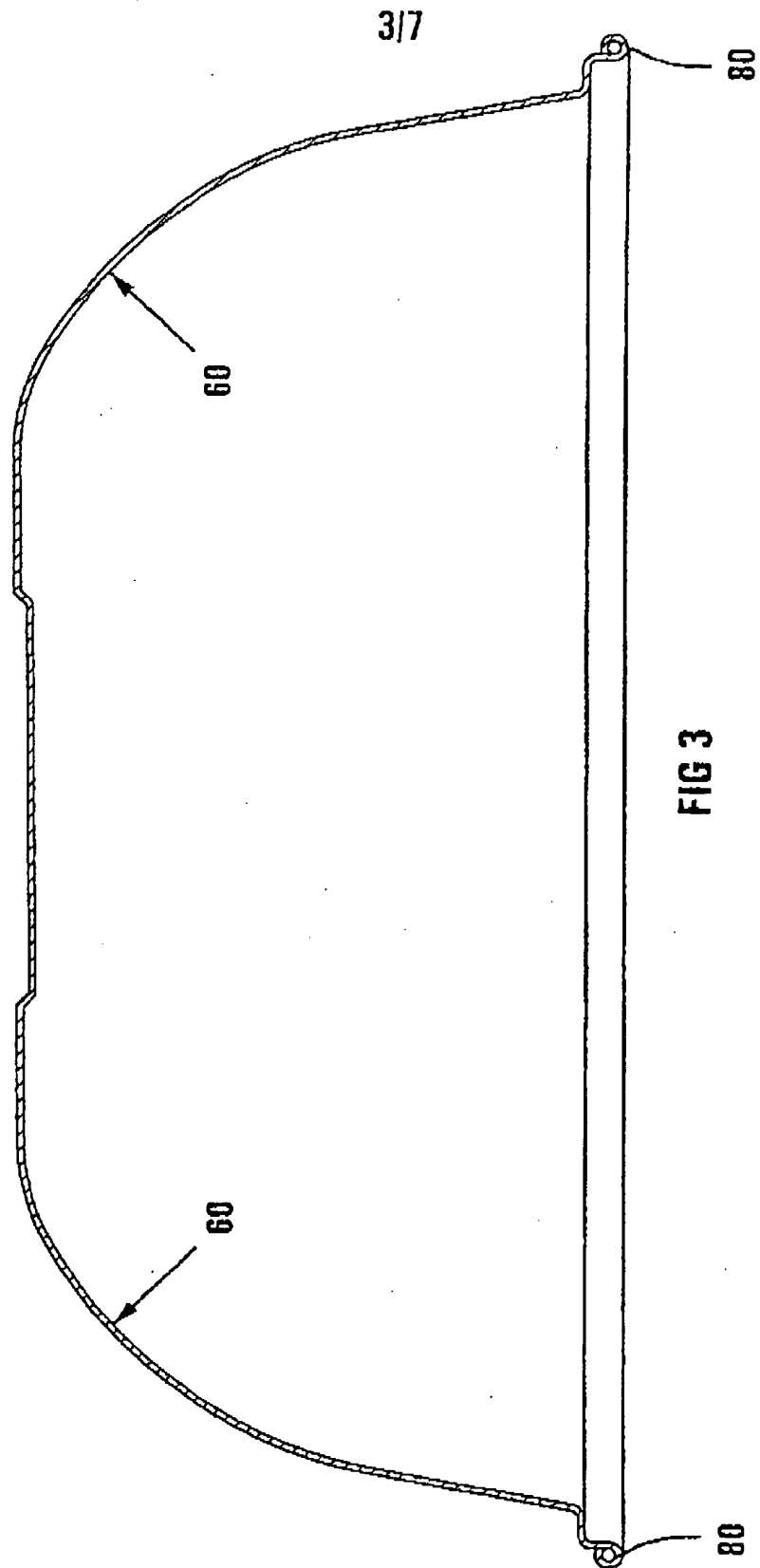
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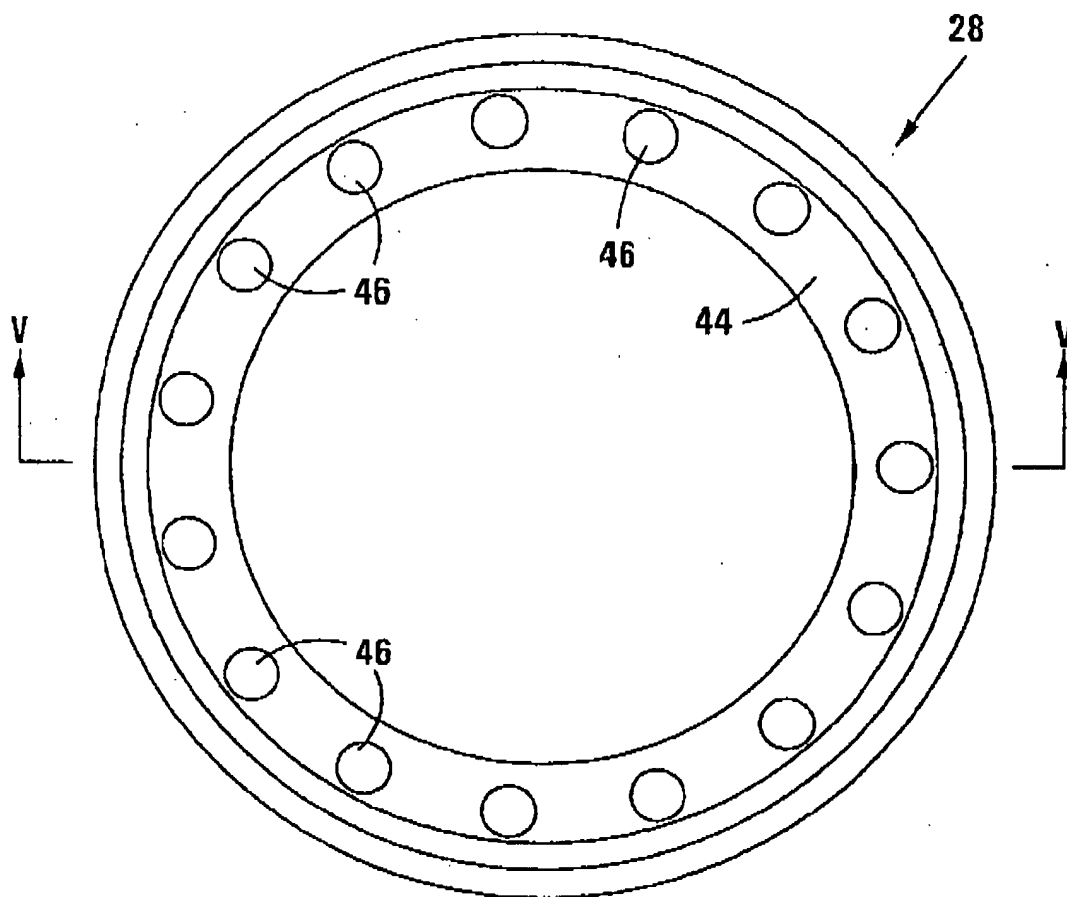


FIG 4

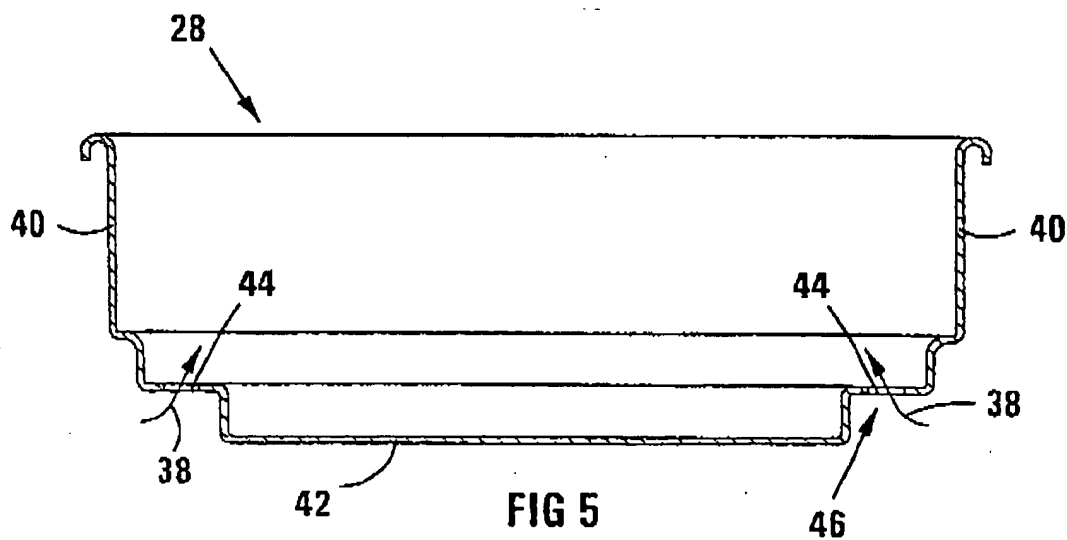
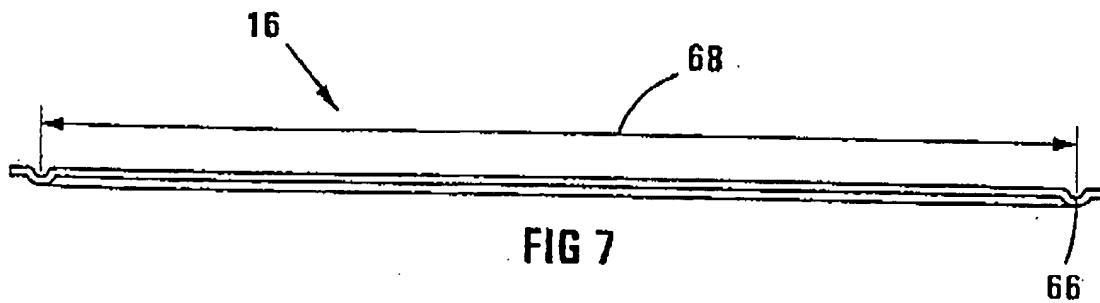
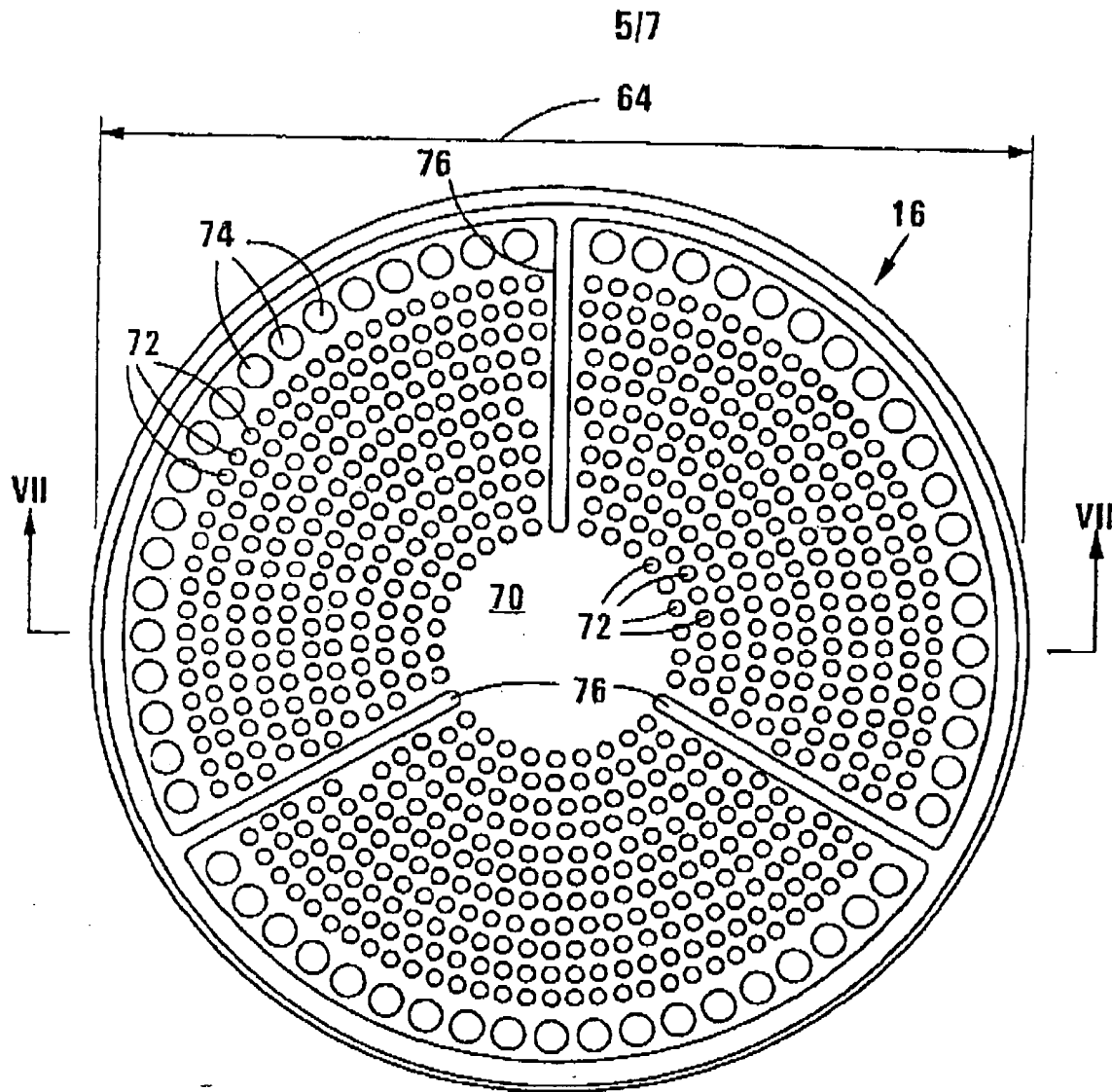


FIG 5

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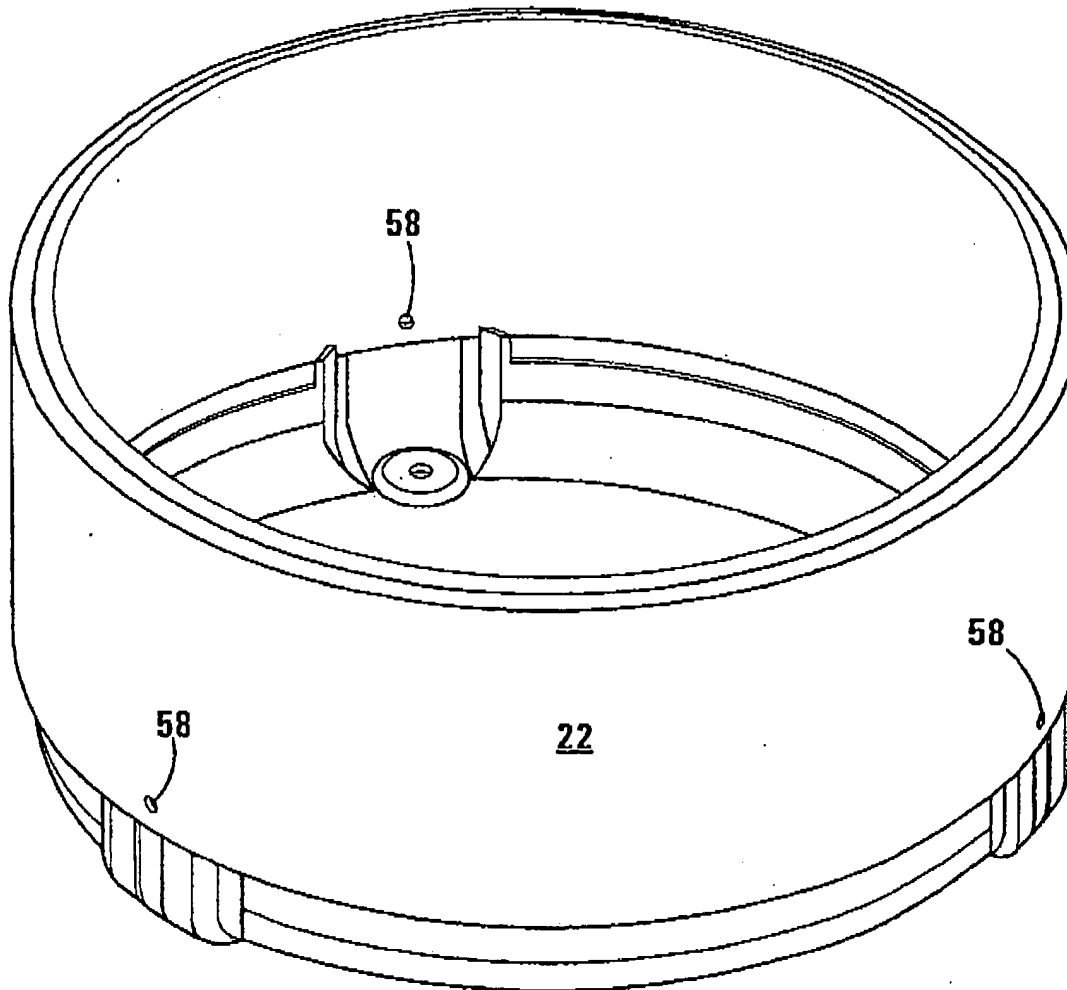


FIG 8

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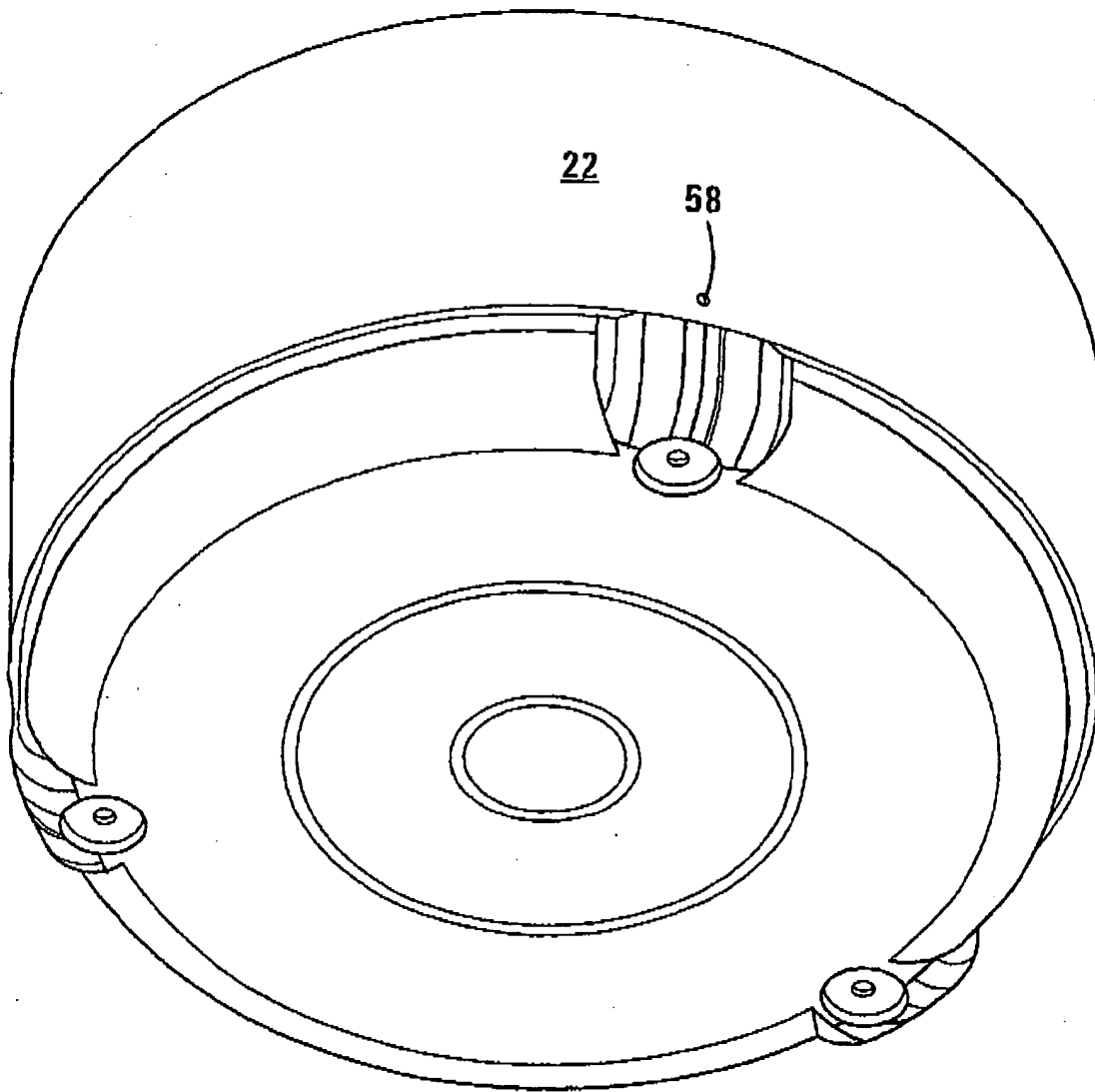


FIG 9

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INTERNATIONAL SEARCH REPORT

Internat Application No

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A47J37/07

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A47J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X	US 5 197 379 A (LEONARD JR GUSTAV) 30 March 1993 (1993-03-30) the whole document	1-3



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Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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